WHAT IS CLAIMED IS:

1. An apparatus, comprising:

a compatible optical disk player recording and/or reproducing data on/from various types of optical disks by using a single optical pickup and by variably setting the light detecting position of a photo-detector according to the types of the optical disks being used.

2. The apparatus as recited in claim 1, further comprising

a first laser diode emitting a first laser beam to a first optical disk;

a second laser diode emitting a second laser beam to a second optical disk;

a diffraction grating selectively splitting the first and the second laser beams into three rays depending on which optical disk is to be accessed; and

a photo-detector selectively receiving the three rays of the first laser beam and the three rays of the second laser beam at different detecting portions for the data recording and/or reproduction and the error detection and compensation.

3. A compatible disk player, comprising:

a first laser diode emitting a first laser beam to a first optical disk;

a second laser diode emitting a second laser beam to a second optical disk;

a diffraction grating selectively splitting the first and the second laser beams into three rays depending on which optical disk is to be accessed, wherein the three rays comprise a main ray and two sub-rays; and

a photo-detector selectively receiving the three rays of the first laser beam and the three rays of the second laser beam at different detecting portions for data recording and/or reproduction and error detection and compensation, wherein the detecting portions comprise a central detecting portion and two peripheral detecting portions.

4. The compatible disk player as recited in claim 3, wherein the photo-detector receives the main ray of the first laser beam on the central detecting portion to determine a focus error and to record and/or reproduce the data on/from the first optical disk, and receives the sub-rays of the first laser beam on the peripheral detecting portions to determine a tracking error.

5. The compatible disk player as recited in claim 4, wherein the photo-detector receives the main ray of the second laser beam on one of the peripheral detecting portions to record and/or reproduce the data on/from the second optical disk, and receives one of the two sub-rays on the central detecting portion to determine a focus error and a tracking error on the second optical disk, wherein the central detecting portion comprises cells A, B, C, and D, and the peripheral detecting portions comprise cells E and F.

6. The compatible disk player as recited in claim 5, wherein the error detection and compensation comprises determining the focus error of the first laser beam using:

Focus error = (A+C) - (B+D).

7. The compatible disk player as recited in claim 5, wherein the error detection and compensation comprises determining the tracking error of the first laser beam using:

Tracking error = E - F.

8. The compatible disk player as recited in claim 5, wherein the data recording and/or reproduction of the first laser beam comprises determining a signal for recording and/or reproducing the data using:

recording and/or reproducing data = A+B+C+D.

9. The compatible disk player as recited in claim 5, wherein the error detection and compensation comprises determining the focus error of the second laser beam using:

Focus error = (A+C) - (B+D).

10. The compatible disk player as recited in claim 5, wherein the error detection and compensation comprises determining the tracking error of the second laser beam using:

Tracking error = (A+C) - (B+D).

11. The compatible disk player as recited in claim 5, wherein the data recording and/or reproduction of the second laser beam comprises determining a signal for recording and/or reproducing the data using:

recording and/or reproducing data = E or F.

12. The compatible disk player as recited in claim 3, wherein an error occurring due to initial positions of the first laser diode and the second laser diode is compensated for by selectively moving the diffraction grating between a first position and a second position,

the first position being such that the main ray of the first laser beam is incident on the central detecting portion, while the two sub-rays are incident on the peripheral detecting portion, and

the second position being such that the main ray of the second laser beam is incident on one of the peripheral detecting portions, while one of the two sub-rays is incident on the central detecting portion.

13. A compatible optical disk player, comprising:

a laser beam source comprising a first laser diode and a second laser diode, wherein the first laser diode emits a first laser beam of a first wavelength for recording and/or reproducing data on/from a first optical disk comprising a first recording density, and the second laser diode emits a second laser beam of a second wavelength for recording and/or reproducing the data on/from a second optical disk comprising a second recording density;

a diffraction grating selectively splitting the first and the second laser beams into a main ray and two sub-rays depending on which optical disk is to be accessed;

a beam splitter selectively reflecting the first laser beam toward the first optical disk and the second laser beam toward the second optical disk;

an objective lens selectively focusing the first laser beam on a recording surface of the first optical disk and the second laser beam on a recording surface of the second optical disk; and

a photo-detector selectively receiving the three rays of the first laser beam and the three rays of the second laser beam at different detecting portions to record and/or reproduce the data and to detect and compensate for errors, wherein the photo-detector is a six-split photo-detector comprising four cells on a central detecting portion and two cells on peripheral detecting portions.

14. The compatible optical disk player as claimed in claim 13, wherein

the main ray of the first laser beam arranged on an optical axis is detected from the central detecting portion to record and/or reproduce the data on/from the first optical disk, and

the main ray of the second laser beam strayed from the optical axis is detected from one of the peripheral detecting portions to record and/or reproduce the data on/from the second optical disk.

15. The compatible optical disk player as claimed in claim 14, wherein the photo-detector

receives the main ray of the first laser beam on the four cells of the central detecting portion to determine a focus error and to record and/or reproduce the data on/from the first optical disk, and receives the sub-rays of the first laser beam on the two cells of the peripheral detecting portions, respectively, to determine a tracking error, and

receives the main ray of the second laser beam on one of the two cells of the peripheral detecting portions to record and/or reproduce the data on/from the second optical disk, and receives one of the two sub-rays on the four cells of the central detecting portion to determine a focus error and a tracking error on the second optical disk.

16. The compatible optical disk player as claimed in claim 15, wherein the diffraction grating is selectively disposed between a first position and a second position in the direction of the optical axis,

the first position being such that the main ray of the first laser beam is incident on the cells of the central detecting portion, while the two sub-rays are incident on the cells of the peripheral detecting portion, and

the second position being such that the main ray of the second laser beam is incident on one of the cells of the peripheral detecting portion, while one of the two sub-rays is incident on the cells of the central detecting portion.

17. A compatible disk player, comprising:

a laser beam source comprising a first laser diode and a second laser diode, wherein the first laser diode emits a first laser beam of a first wavelength for recording and/or reproducing data on/from a first optical disk comprising a first recording density, and the second laser diode emits a second laser beam of a second wavelength for recording and/or reproducing the data on/from a second optical disk comprising a second recording density;

a diffraction grating selectively splitting the first and the second laser beams into a main ray and two sub-rays depending on which optical disk is to be accessed, wherein the diffraction grating is movable between a first position and a second position in the direction of the optical axis based upon which optical disk is to be accessed;

a beam splitter selectively reflecting the first laser beam toward the first optical disk and the second laser beam toward the second optical disk;

an annular cover lens selectively adjusting a size of the first laser beam on the first optical disk and the second laser beam on the second optical disk;

an objective lens selectively focusing the first laser beam on a recording surface of the first optical disk and the second laser beam on a recording surface of the second optical disk; and

a photo-detector comprising a central detecting portion and two peripheral detecting portions, wherein the photo-detector selectively receives

the main ray of the first laser beam on the central detecting portion to determine a focus error and to record and/or reproduce the data on/from the first optical disk and receives the sub-rays of the first laser beam on the peripheral detecting portions to determine a tracking error, and

the main ray of the second laser beam on the peripheral detecting portions to record and/or reproduce the data on/from the second optical disk and receives one of the two sub-rays on the central detecting portion to determine the focus error and the tracking error on the second optical disk.

18. A method for a compatible optical disk player for recording and/or reproducing data, comprising:

emitting a first laser beam to a first optical disk;

emitting a second laser beam to a second optical disk;

selectively splitting the first and the second laser beams into three rays depending on which optical disk is to be accessed, wherein the three rays comprise a main ray and two sub-rays depending on which optical disk to be accessed; and

selectively receiving the three rays of the first laser beam and the three rays of the second laser beam at different detecting portions for the data recording and/or reproducing and error detection and compensation, wherein the detecting portions comprise a central detecting portion and two peripheral detecting portions.

19. The method as recited in claim 18, further comprising:

receiving the main ray of the first laser beam on the central detecting portion to determine a focus error and to record and/or reproduce the data on/from the first optical disk; and

receiving the sub-rays of the first laser beam on the peripheral detecting portions to determine a tracking error.

20. The method as recited in claim 19, further comprising:

receiving the main ray of the second laser beam on one of the peripheral detecting portions to record and/or reproduce the data on/from the second optical disk; and

receiving one of the two sub-rays on the central detecting portion to determine a focus error and a tracking error on the second optical disk, wherein the central detecting portion comprises cells A, B, C, and D, and the peripheral detecting portions comprise cells E and F.

21. The method as recited in claim 20, further comprising determining the focus error of the first laser beam using:

Focus error = (A+C) - (B+D).

22. The method as recited in claim 20, further comprising determining the tracking error of the first laser beam using:

Tracking error = E - F.

23. The method as recited in claim 20, further comprising determining the data recording and/or reproducing of the first laser beam using:

recording and/or reproducing data = A+B+C+D.

24. The method as recited in claim 20, further comprising determining the focus error of the second laser beam using:

Focus error = (A+C) - (B+D).

25. The method as recited in claim 20, further comprising determining the tracking error of the second laser beam using:

Tracking error = (A+C) - (B+D).

26. The method as recited in claim 20, further comprising determining the data recording and/or reproducing of the second laser beam using:

recording and/or reproducing data = E or F.

27. The method as recited in claim 18, further comprising compensating for an error occurring due to initial positions of the first laser diode and the second laser diode by moving the diffraction grating between a first position and a second position,

the first position in which the main ray of the first laser beam is incident on the central detecting portion, while the two sub-rays are incident on the peripheral detecting portions, respectively, and

the second position in which the main ray of the second laser beam is incident on one of the peripheral detecting portion, while one of the two sub-rays is incident on the central detecting portion.

28. A method for a compatible optical disk player for recording and/or reproducing data, comprising:

selectively emitting a first laser beam of a first wavelength for recording and/or reproducing the data on/from a first optical disk comprising a first recording density and a second laser beam of a second wavelength for recording and/or reproducing the data on/from a second optical disk comprising a second recording density;

selectively splitting the first and the second laser beams into a main ray and two sub-rays depending on which optical disk is to be accessed, wherein the main ray is a 0 order light and the sub-rays are ±1 order lights;

selectively reflecting the first laser beam toward the first optical disk and the second laser beam toward the second optical disk;

selectively focusing the first laser beam on a recording surface of the first optical disk and the second laser beam on a recording surface of the second optical disk; and

selectively receiving the three rays of the first laser beam and the three rays of the second laser beam at different detecting portions to record and/or reproduce the data and to detect and compensate for errors.

29. The method as claimed in claim 28, further comprising:

detecting the main ray of the first laser beam arranged on an optical axis from a central detecting portion of a photo-detector to record and/or reproduce the data on/from the first optical disk, and

detecting the main ray of the second laser beam strayed from the optical axis from one of peripheral detecting portions of the photo-detector to record and/or reproduce the data on/from the second optical disk.

30. The method as claimed in claim 29, further comprising

receiving the main ray of the first laser beam on four cells of the central detecting portion to determine a focus error and to record and/or reproduce the data on/from the first optical disk;

receiving the sub-rays of the first laser beam on two cells of the peripheral detecting portions, respectively, to determine a tracking error;

receiving the main ray of the second laser beam on one of the two cells of the peripheral detecting portions to record and/or reproduce the data on/from the second optical disk; and

receiving one of the two sub-rays of the second laser beam on the four cells of the central detecting portion to determine a focus error and a tracking error on the second optical disk.

31. The method as claimed in claim 30, further comprising:

selectively disposing the diffraction grating between a first position and a second position in the direction of the optical axis, the first position in which the main ray of the first laser beam is incident on the cells of the central detecting portion, while the two sub-rays of the first laser beam are incident on the cells of the peripheral detecting portions, and the second position in which the main ray of the second laser beam is incident on one of the cells of the peripheral detecting portions, while one of the two sub-rays of the second laser beam is incident on the cells of the central detecting portion.

32. A method for a compatible optical disk player for recording and/or reproducing data, comprising:

selectively emitting a first laser beam of a first wavelength for recording and/or reproducing the data on/from a first optical disk comprising a first recording density, and a second laser beam of a second wavelength for recording and/or reproducing the data on/from a second optical disk comprising a second recording density;

selectively splitting the first and the second laser beams into a main ray and two sub-rays, wherein the diffraction grating is movable between a first position and a second position in the direction of the optical axis based upon which optical disk is to be accessed;

selectively reflecting the first laser beam toward the first optical disk and the second laser beam toward the second optical disk;

selectively adjusting a size of the first laser beam on the first optical disk and the second laser beam on the second optical disk;

selectively focusing the first laser beam on a recording surface of the first optical disk and the second laser beam on a recording surface of the second optical disk;

receiving the main ray of the first laser beam on a central detecting portion to determine a focus error and to record and/or reproduce the data on/from the first optical disk;

receiving the sub-rays of the first laser beam on peripheral detecting portions to determine a tracking error;

receiving the main ray of the second laser beam on one of the peripheral detecting portions to record and/or reproduce the data on/from the second optical disk; and

receiving one of the two sub-rays on the central detecting portion to determine the focus error and the tracking error on the second optical disk.